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Mapping Two Decades of Innovation Management Research: A Bibliometric Review from Scopus (2005–2025)

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Received:
18 May 2026

Revised:
21 July 2026

Accepted:
25 July 2026

Abstract

This bibliometric review maps the evolution of innovation management research using 2,170 Scopus-indexed journal articles from 2005 to 2025. Following PRISMA guidelines and analyzed via R-based tools, the field demonstrates rapid expansion with a 26.5% annual growth rate. Findings highlight a strong convergence of innovation with sustainability; Sustainability emerges as the most prolific journal, while scholars from China lead in productivity and international collaboration. The conceptual structure centers on knowledge management and open innovation, with recent thematic shifts emphasizing interdisciplinary areas like artificial intelligence, the circular economy, and crisis management. Ultimately, this study provides a structured overview to guide future research agendas responsive to contemporary global challenges.

Keywords: Innovation Management, Bibliometric, Performance Analysis, Conceptual Structure, Social Structure,

At-Tadbir: Jurnal Ilmiah Manajemen
Vol. 10, No. 2, 2026, 245 – 267
DOI: 10.31602/atd.v10i2.22727

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Abstrak

Studi literatur bibliometrik ini memetakan evolusi penelitian manajemen inovasi menggunakan 2.170 artikel jurnal terindeks Scopus dari tahun 2005 hingga 2025. Dengan mengikuti pedoman PRISMA dan dianalisis menggunakan perangkat berbasis R, bidang ini menunjukkan ekspansi yang cepat dengan tingkat pertumbuhan tahunan sebesar 26,5%. Temuan penelitian menyoroti konvergensi yang kuat antara inovasi dan keberlanjutan; jurnal Sustainability muncul sebagai sumber publikasi paling produktif, sementara para peneliti dari Tiongkok memimpin dalam produktivitas dan kolaborasi internasional. Struktur konseptual berpusat pada manajemen pengetahuan (knowledge management) dan inovasi terbuka (open innovation), dengan pergeseran tematik baru-baru ini yang menekankan pada bidang antardisiplin seperti kecerdasan buatan, ekonomi sirkular, dan manajemen krisis. Pada akhirnya,

Kata kunci: Manajemen Inovasi, Bibliometrik, Analisis Kinerja, Struktur Konseptual, Struktur Sosial

1. INTRODUCTION

Innovation management has increasingly become essential for economic growth and organizational resilience in today's globalized economy, evolving from a simple competitive advantage into a fundamental prerequisite for survival. The transformative phase from 2005 to 2025 has been marked by significant shifts, primarily driven by Artificial Intelligence (AI), which has emerged as a central catalyst in innovation management. AI facilitates the identification of opportunities and democratizes the innovation landscape, albeit with an essential requirement for human judgment and oversight to maximize its efficacy (Ahmad et al., 2023). This period has also witnessed a shift from isolated, R&D-centric innovation toward collaborative, open ecosystems, underscoring the importance of leveraging diverse capabilities and expertise through strategic partnerships (Abbasi et al., 2022).

Alongside these developments, there has been a rising emphasis on sustainability as a core principle within innovation frameworks. Corporations increasingly prioritize purpose-driven innovation, embracing circular lifecycle approaches and renewable energy solutions as integral components of their competitive strategy (BALCIOĞLU & AKÇİN, 2023; Saniuk et al., 2022). This alignment reflects an understanding that sustainability is no longer ancillary but a vital criterion influencing organizational performance and public perception. These macro-trends are amplified through the implementation of agile systems and the empowerment of internal innovators, who are crucial to navigating the complexities of the modern business environment (Mangelkramer, 2022). Nonetheless, various challenges persist, notably in fostering a robust innovation culture, navigating digital transformations, integrating diverse technologies, and overcoming entrenched risk aversion.

A significant issue lies in the lack of a unified, transparent model for innovation management, exposing a critical implementation gap between theoretical frameworks and practical applications. Despite advancements in theory and research, innovation management remains fraught with complexities and a high degree of variability in outcomes, producing what has been termed a large heterogeneity of results (da Silva & Silva Cirani, 2020). Current managerial practices often remain vague, complicating the translation of theoretical insights into actionable strategies for organizations. Traditional narrative reviews have proven insufficient, necessitating more rigorous, systematic, and quantitative approaches to better understand and articulate the multifaceted nature of innovation management (Alqudah et al., 2022; Kumarapeli et al., 2024).

Multiple bibliometric and literature reviews have extensively mapped the field of innovation management across various dimensions. For instance, a comprehensive analysis using Scopus has highlighted ongoing challenges in international collaboration within the domain (Newaz et al., 2022; Tripathi, 2023). Other studies have employed alternative databases such as Web of Science or focused on particular niches, yet often these efforts are constrained by the temporal or thematic limits inherent in their approaches (Jotabá et al., 2022; Spieth et al., 2025). While these works provide valuable insights, their historical or regional foci frequently obscure more recent dynamics and fail to offer a holistic global perspective on innovation management. Significant gaps exist, particularly with no singular study delivering an updated bibliometric overview of the entire innovation management field from 2005 to 2025 employing the Scopus database (N. Jia, 2023; Lahti et al., 2023).

The necessity for a focused review during this transformative period, characterized by the pivotal roles of AI, digital transformation, and sustainability, becomes apparent. An analysis that emphasizes the digital era blind spot is crucial in understanding how these contemporary forces shape and

reshape research directions and innovation management practices (Maluche & Orozco, 2024). This study will leverage a comprehensive interdisciplinary dataset from Scopus to provide a timely overview of current structures within the field and guide future research paths. This focused approach not only promises to illuminate the evolution of research but also significantly contributes to developing a coherent research agenda that is responsive to contemporary challenges in innovation management (Razinskas et al., 2022).

This endeavour's overarching purpose is to systematically map and scrutinize the trajectory of innovation management research in the Scopus database from 2005 to 2025 utilizing advanced bibliometric methods, thereby offering comprehensive, objective, and timely insights into the evolution of the field. Specific objectives include identifying growth trajectories and publication patterns, delineating influential authors through citation metrics and co-authorship networks, uncovering dominant thematic clusters, and examining collaboration dynamics across authors, institutions, and countries (Adebisi et al., 2023; Medhat et al., 2022). Furthermore, the research aimed to pinpoint emerging areas of inquiry and future directions to foster a more structured and coherent research agenda for innovation management.

2. LITERATURE REVIEW

2.1. The Evolution of Innovation Management Concepts

The field of innovation management has undergone a profound transformation over the past two decades, evolving from a technical and product-centric view to a broader, more holistic understanding. Early conceptualizations, particularly prior to the 2000s, often anchored innovation within Research and Development (R&D) departments, focusing primarily on the creation of novel products and processes. This perspective fundamentally reflected Schumpeter's notion of creative destruction, which describes innovation as a discontinuous event, a rare breakthrough that disrupts existing markets (Z. Wang et al., 2023). However, as the 21st century progressed, the rapid pace of technological change and heightened global competition necessitated a more dynamic and continuous approach to innovation management.

Emerging research began to highlight the significance of organizational capabilities in fostering innovation, thereby moving beyond mere invention to the successful implementation and commercialization of new ideas (Effendi et al., 2022). Notably, Teece's seminal work on dynamic capabilities posited that an organization must possess the ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments if it is to sustain innovation (Gilsing et al., 2021). This marked a significant paradigm shift, recognizing that innovation involves an organization's systemic capacity to adapt and evolve in response to environmental challenges.

Furthermore, the definition of innovation expanded considerably during this period. Beyond tangible products and processes, academic discourse increasingly embraced business model innovation, service innovation, and even social innovation (Lang, 2020; Yu et al., 2020). This broader scope acknowledged that new ways of organizing, delivering value, and addressing societal challenges are equally vital forms of innovation, often yielding substantial economic and social impacts. For instance, studies by Chesbrough on open innovation challenged conventional closed R&D frameworks, demonstrating how external knowledge flows and collaborations could significantly enhance a firm's innovative capacity (Sopińska, 2023). While Chesbrough's insights were transformative, they also ignited critical discussions noting that while openness can be

beneficial, it introduces complexities in intellectual property management and knowledge absorption (Jin et al., 2022), necessitating sophisticated organizational structures and processes to effectively leverage external insights.

2.2. Key Pillars of Innovation Management Research and Their Interconnections

Innovation management research has coalesced around several key pillars, each contributing to a nuanced understanding of how organizations generate, implement, and leverage new ideas. One prominent pillar is the study of organizational culture and leadership as enablers of innovation. Research demonstrates that a culture that embraces risk-taking, fosters psychological safety, and encourages experimentation is crucial for nurturing innovative behaviors (Raharso, 2021). Leaders in this context are recognized not just as decision-makers but as catalysts who articulate a compelling vision, empower employees, and allocate resources to support innovative endeavors (Dabic et al., 2020). While the impact of supportive leadership on innovation is widely acknowledged, critical perspectives have surfaced, revealing that telling employees to be innovative without providing the necessary autonomy, resources, and recognition can lead to frustration and disengagement (Ortigueira-Sánchez et al., 2020). The challenge lies in creating authentic support mechanisms that cultivate a genuinely innovative environment.

Another essential pillar involves knowledge management and learning processes, acknowledging that innovation is fundamentally a knowledge-intensive activity. Studies frequently explore how organizations acquire, share, and apply both explicit and tacit knowledge to generate new ideas and solutions (Rahim et al., 2021). This area incorporates research on absorptive capacity, which refers to a firm's ability to recognize the value of new, external information, assimilate it, and apply it to commercial ends (Gallegos & Mikhieieva, 2022). However, possessing knowledge alone is insufficient; organizations must be capable of effectively transforming that knowledge into actionable insights and innovative outputs. This remains a significant research area, as firms navigate the complexities of managing knowledge to drive innovation (Lee et al., 2020).

The third, and increasingly critical, pillar revolves around collaboration and open innovation. Contemporary research examines how firms leverage external networks, partnerships, and ecosystems to enhance their innovative capabilities, moving well beyond traditional internal R&D channels (Sancho-zamora et al., 2022). This includes exploring various forms of collaboration, such as strategic alliances with suppliers and customers, and participation in broader innovation ecosystems involving universities, startups, and even competitors (Kapoor & Aggarwal, 2021). The concept of open innovation, championed by scholars like Henry Chesbrough, has illustrated the benefits of managing knowledge inflows and outflows across organizational boundaries. While open innovation offers advantages in accessing diverse knowledge and reducing development costs, critical analyses have pointed out the complexities involved, such as challenges in intellectual property sharing and managing partner expectations, which necessitate effective structures for knowledge transfer across organizational silos (Sánchez-López et al., 2024).

3. METHODOLOGY

3.1. Research Method

This study employed a bibliometric approach to systematically map and analyze the intellectual landscape of innovation management research over the past two decades. A bibliometric review was particularly well-suited for this objective as it offered a robust, quantitative method for identifying

trends, key contributors, thematic evolution, and the underlying structure of a scientific field by analyzing large volumes of published literature (Donthu et al., 2021). This method was instrumental in understanding the evolution of concepts, identifying intellectual communities, and discerning the dominant research paradigms within a specific domain over a defined period.

3.2. Research Approach

This research adopted a quantitative, bibliometric research design to provide a systematic and rigorous overview of innovation management scholarship. The selection of a bibliometric approach was justified by its capacity to analyze large datasets of scientific publications, thereby overcoming the limitations of traditional qualitative reviews which were often constrained by the volume of literature they could realistically process. By applying statistical and mathematical methods to research output, bibliometrics enabled the identification of key trends, thematic structures, and collaborative networks that defined a specific research domain (Zupic & Čater, 2015).

3.3. Data Sources and Types

The primary data source for this bibliometric review was the Scopus database, which was widely recognized for its extensive coverage of peer-reviewed literature across various scientific disciplines, including social sciences and business management. Scopus offered comprehensive indexing of journals, conference proceedings, and books, making it an ideal platform for capturing a broad spectrum of scholarly output in innovation management. The dataset consisted exclusively of journal articles published between January 1, 2005, and December 31, 2025. This specific publication window of twenty years was chosen to provide a comprehensive historical perspective on the evolution of innovation management research, capturing significant conceptual shifts and methodological advancements over two full decades.

3.4. Data Collection Process

The data collection process involved a systematic search query executed within the Scopus database. To ensure relevance and comprehensiveness, the search was confined to articles containing the keywords Innovation Management in their title, abstract, or keywords. This strategy aimed to capture the core literature directly pertaining to the study's scope, minimizing the inclusion of less relevant publications. The initial search yielded a total of 2170 articles meeting these criteria. The search query was carefully constructed and refined to maximize precision and recall, ensuring that all pertinent literature was identified while extraneous articles were excluded. The extracted data included essential bibliometric information for each article, such as title, abstract, authors, affiliations, publication year, journal name, keywords, and citation counts.

3.5. Data Selection Process

The data selection process rigorously adhered to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, ensuring a transparent, systematic, and reproducible approach to filtering the initial dataset. While PRISMA was typically applied to systematic reviews of interventions, its core principles of explicit reporting, systematic searching, and clear inclusion/exclusion criteria were highly valuable for enhancing the methodological rigor of bibliometric studies (Page et al., 2021). After the initial retrieval of 2170 articles from Scopus, a multi-stage screening process was applied. First, duplicate entries were meticulously identified and

removed. Second, articles were screened based on their titles and abstracts to ensure direct relevance to innovation management research and to exclude any articles that, despite containing the keywords, were outside the scope (e.g., purely technical engineering papers without management implications, medical innovation without a management focus). Finally, a full-text review was conducted for any articles where the relevance remained ambiguous after title and abstract screening. This systematic filtering process ensured that only the most pertinent and high-quality articles were included in the final dataset for analysis, thereby enhancing the validity and reliability of the study's findings.

3.6. Data Analysis and Interpretation Process

The analysis and interpretation of the collected bibliometric data were performed using the Biblioshiny-R software, a comprehensive R-Studio package specifically designed for bibliometric analysis and visualization (Aria & Cuccurullo, 2017). This software offered a robust suite of tools for quantitative and qualitative assessments of scientific literature. The analytical process involved several key steps aimed at mapping the intellectual and social structures of the innovation management field.

4. RESULT

4.1. Data Overview

Figure 1 presented the dataset comprised a substantial body of 2170 documents, primarily consisting of journal articles. This large number of publications underscored the increasing academic interest and importance attributed to innovation management as a field of study. The data showed a robust annual growth rate of 26.49%2, indicating a rapidly expanding research domain that consistently attracted new scholarly contributions year after year. The average age of documents was relatively low at 4.32 years, suggesting a field characterized by recent and continuously evolving research, where newer studies quickly superseded older ones in terms of relevance and impact.

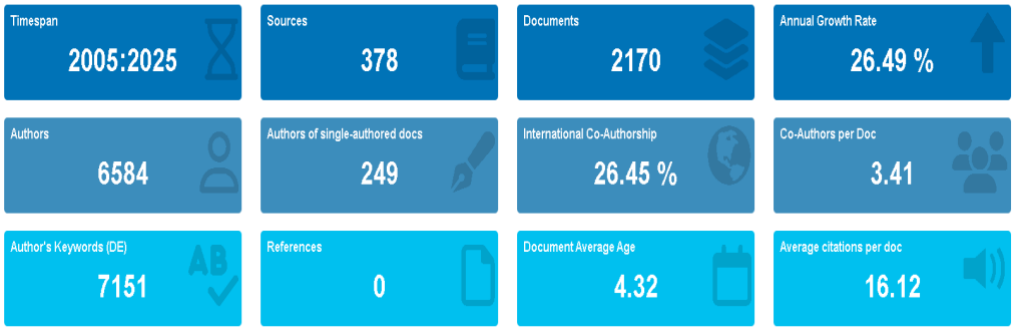


Figure 1. Data Overview
Source : Authors, 2025

Furthermore, the average citations per document stood at 16.12, which reflected a healthy level of scholarly engagement and influence within the field, demonstrating that published works were actively referenced and built upon by subsequent research. The comprehensive scope of the dataset was also evident in the number of contributing authors, totaling 6584 unique authors across 378 distinct sources, which included journals and other publication types. This broad authorship indicated a diverse and expansive research community actively contributing to innovation management knowledge. The analysis also revealed a notable trend towards collaborative research, with an average of 3.41 co-authors per document, significantly outweighing the 259 single-authored

documents.

Moreover, international collaborations were substantial, accounting for 26.45% of co-authorships, highlighting the global nature of innovation management challenges and research efforts to address them. These overarching metrics painted a picture of a vibrant, collaborative, and rapidly expanding research domain during the specified two-decade period.

4.2. Performance Analysis

4.2.1. Source Analysis

An examination of the most relevant sources publishing on innovation management between 2005 and 2025 revealed a concentrated yet interdisciplinary publication landscape (Showed in Table 1). Sustainability (Switzerland) emerged as the overwhelmingly dominant journal, having published an impressive 848 articles related to innovation management. This significant volume suggested that innovation management research was increasingly intertwined with sustainability discourse, reflecting a growing awareness among scholars of the environmental and social dimensions of innovation.

The prominence of Sustainability (Switzerland) also indicated a shift in focus towards responsible innovation and the integration of sustainable practices within management frameworks. Following Sustainability (Switzerland), Cogent Business and Management stood out with 103 articles, affirming its role as a key venue for general business and management studies that often intersect with innovation topics.

Table 1. Most Relevant Source

Sources	Articles
Sustainability (Switzerland)	848
Cogent Business And Management	103
Journal Of Open Innovation: Technology, Market, And Complexity	71
Water (Switzerland)	59
Journal Of Technology Management And Innovation	45
Sustainability (Switzerland)	42
Bmc Medical Education	28
Journal Of Innovation Management	27
Problems And Perspectives In Management	23
Journal Of Innovation And Knowledge	22
Uncertain Supply Chain Management	20
Journal Of Infrastructure, Policy And Development	17
Journal Of Innovation And Entrepreneurship	17
Journal Of The Medical Library Association	17
Polish Journal Of Management Studies	16

Source : Biblioshiny-R Output, 2025

Journal of Open Innovation: Technology, Market, and Complexity ranked third with 71 articles, specifically highlighting the increasing academic interest in collaborative and externally driven innovation models. Other notable journals included Water (Switzerland), Journal of Technology Management and Innovation, and BMC Medical Education. The presence of Water (Switzerland)

and BMC Medical Education in the top relevant sources underscored the interdisciplinary nature of innovation management, demonstrating how its principles and practices were being applied and researched across diverse sectors, from environmental resource management to healthcare and education. While these journals formed the core publication outlets, the broader distribution across 378 distinct sources indicated that innovation management research was not confined to a few specialized journals but was disseminated across a wide array of academic platforms, reflecting the pervasive relevance of innovation across various domains.

4.2.2. Author Analysis

The analysis of the most relevant authors (Table 2), based on their publication output within the 2005-2025 timeframe, highlighted a significant concentration of productivity among a specific group of scholars, predominantly those with East Asian, particularly Chinese, names.

Table 2. Most Relevant Authors (N=15)

Authors	Articles	Articles Fractionalized	Authors	Articles	Articles Fractionalized
Zhang X	14	4.38	Liu Y	8	3.15
Li Y	11	3.82	Wang J	8	1.85
Zhang H	11	4.07	Wang X	8	2.43
Zhang Y	10	2.51	Chen J	7	2.12
Wang H	9	2.62	Kim S	7	2.83
Wang Y	9	2.53	Li S	7	2.50
Li C	8	3.05	Liu S	7	1.99
Li X	8	2.21			

Source : Biblioshiny-R Output, 2025

Zhang X led the list with 14 articles, demonstrating remarkable scholarly output in the field. Following closely were Li Y and Zhang H, each contributing 11 articles, further solidifying the strong presence of researchers from this region. Other highly prolific authors included Zhang Y (10 articles), Wang H (9 articles), and Wang Y (9 articles). This pattern suggested that scholars from East Asia played a pivotal role in shaping the innovation management research landscape over the past two decades. The high volume of publications from these authors could be attributed to several factors, including the rapid economic development and emphasis on innovation in countries like China, which likely fostered significant research investments and opportunities in the field. The consistency of these authors' output indicated sustained engagement with innovation management topics, contributing to the field's continuous growth. While the table presented articles in both absolute numbers and fractionalized counts, which accounted for co-authorship contributions, the absolute numbers clearly underscored the sheer volume of their individual contributions. The dominance of these authors implied that their research themes and methodologies likely exerted considerable influence on the broader discourse of innovation management.

4.2.3. Document Analysis

Table 3 presented the result of an examination of the most globally cited documents revealed the seminal papers that had the greatest impact and influence on innovation management research between 2005 and 2025.

Table 3. Most Global Cited Documents (N=15)

Paper	DOI	Total Citations	TC Per Year	Normalized TC
Ode and Ayavoo (2020), J Innov Knowl	10.1016/J.Jik.2019.08.002	353	58.83	13.81
Ranieri et al. (2018), Sustainability	10.3390/Su10030782	348	43.50	10.15
Lytras and Visvizi (2018), Sustainability	10.3390/Su10061998	322	40.25	9.39
Guo et al. (2018), Sustainability	10.3390/Su10040940	301	37.63	8.78
Borrello et al. (2017), Sustainability	10.3390/Su9010141	273	30.33	8.53
Berti and Mulligan (2016), Sustainability	10.3390/Su8070616	270	27.00	9.74
Wang et al. (2022), J Innov Knowl	10.1016/J.Jik.2022.100272	259	64.75	18.75
Saunila (2020), J Innov Knowl	10.1016/J.Jik.2019.11.002	255	42.50	9.98
Lam et al. (2021), J Open Innov: Technol Mark Complex	10.3390/Joitmc7010066	246	49.20	12.97
Jia et al. (2018), Sustainability	10.3390/Su10093237	244	30.50	7.11
Martínez-Peláez et al. (2023), Sustainability	10.3390/Su151411221	238	79.33	24.99
Feng and Chen (2018), Sustainability	10.3390/Su10010223	234	29.25	6.82
Zawislak et al. (2012), J Technol Manage Innov	10.4067/S0718-27242012000200002	194	13.86	7.35
Zhang et al. (2019), Sustainability	10.3390/Su11020495	184	26.29	7.81
Abbas et al. (2020), Sustainability	10.3390/Su12062407	180	30.00	7.04

Source : Biblioshiny-R Output, 2025

The top-cited paper, Ode and Ayavoo (2020) garnered an impressive 353 total citations, with a high 58.83 citations per year, indicating its rapid and sustained influence since its publication. This highlighted the currency and immediate relevance of its findings to the academic community. Following closely were several papers published in Sustainability, including Ranieri et al. (2018) with 348 citations, Lytras and Visvizi (2018) with 322 citations, and Guo et al. (2018) with 301 citations. The strong presence of articles from Sustainability among the most cited documents further reinforced the trend observed in the source analysis: the increasing convergence of innovation management with sustainability and environmental concerns. This suggested that research exploring the intersections of innovation, sustainable development, and corporate responsibility had gained significant traction and scholarly attention. The consistent high citation counts for these papers indicated that they likely introduced novel theoretical frameworks, robust empirical findings, or

critical reviews that served as foundational references for subsequent studies.

The Normalized TC metric, which accounted for the age of the document, also offered insights into the relative impact, with Martínez-Peláez et al. (2023) showing an exceptionally high 24.99 normalized citations, despite its recent publication, underscoring its immediate and substantial influence. These highly cited works likely shaped the conceptual understanding, research methodologies, and policy implications within the field, representing the intellectual core around which much of the subsequent innovation management research had been built.

4.3. Conceptual Structure

4.3.1. Co-Occurance Network

The co-occurrence network of keywords provides a visual representation of the conceptual structure and the most prominent themes within innovation management research from 2005 to 2025 (Showed in Figure 2).

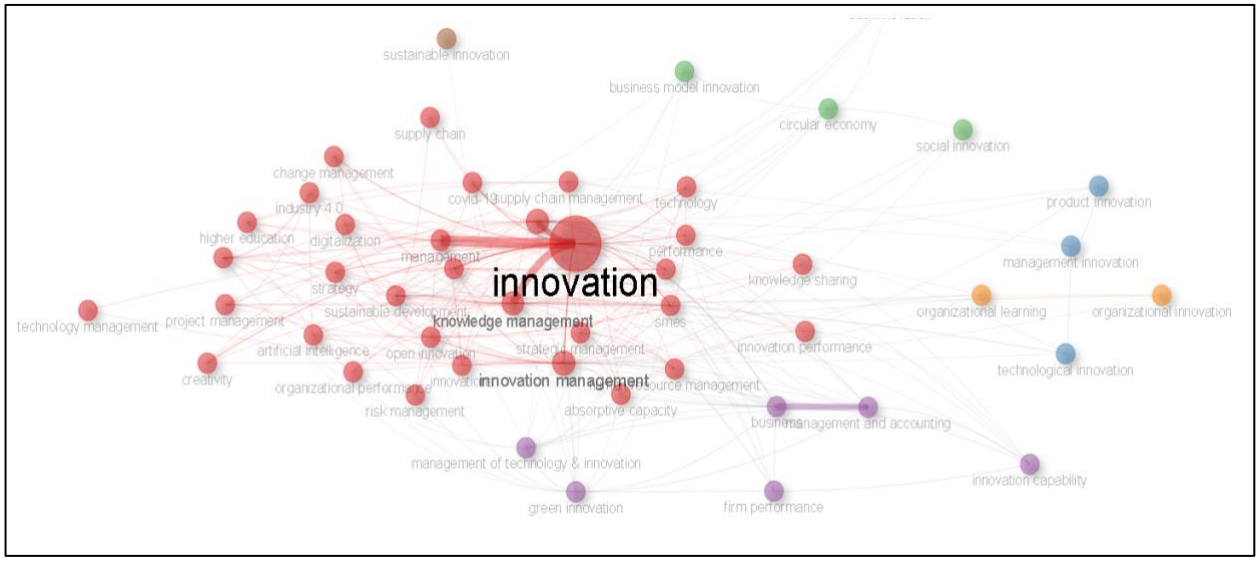


Figure 2. Co-Occurance Network
Source : Biblioshiny-R Output, 2025

The largest and most centrally positioned node is innovation, which served as the core concept, directly connected to almost all other major themes, underscoring its foundational role in the field. Clustered closely around innovation and strongly connected were terms such as knowledge management, innovation management, sustainability, performance, and technology, indicating these as central pillars of the academic discourse. The thick lines connecting innovation with knowledge management and innovation management highlighted their strong conceptual link, reflecting the consensus that effective management of knowledge is critical for driving innovation processes. The visible cluster around sustainability and sustainable innovation (in red) further emphasized the growing integration of environmental and social considerations within innovation studies, aligning with the prominence of Sustainability (Switzerland) as a key publishing venue.

Another distinct cluster (in green) included business model innovation, circular economy, and social innovation, suggesting a focus on novel organizational approaches and broader societal impact beyond traditional product or process innovation. The network also revealed connections to specific contextual factors and drivers, such as COVID-19 and supply chain management, illustrating the field's responsiveness to contemporary global challenges. Themes like absorptive capacity and open

innovation were also clearly visible, reinforcing the theoretical underpinnings of how organizations acquire and leverage external knowledge for innovation. The relatively distinct blue cluster on the right, containing product innovation, management innovation, organizational learning, and technological innovation, represented more traditional innovation areas, though they appeared somewhat less central than the broader innovation hub, indicating an expansion of the field's focus beyond these core aspects. This co-occurrence network effectively mapped the intellectual landscape, showing a field that was not only expanding but also becoming increasingly interconnected and interdisciplinary in its conceptual exploration.

4.3.2. Thematic Maps

Figure 3 presented the thematic map and provides a strategic representation of the intellectual structure of innovation management research, categorizing themes based on their centrality (relevance) and density (development degree).

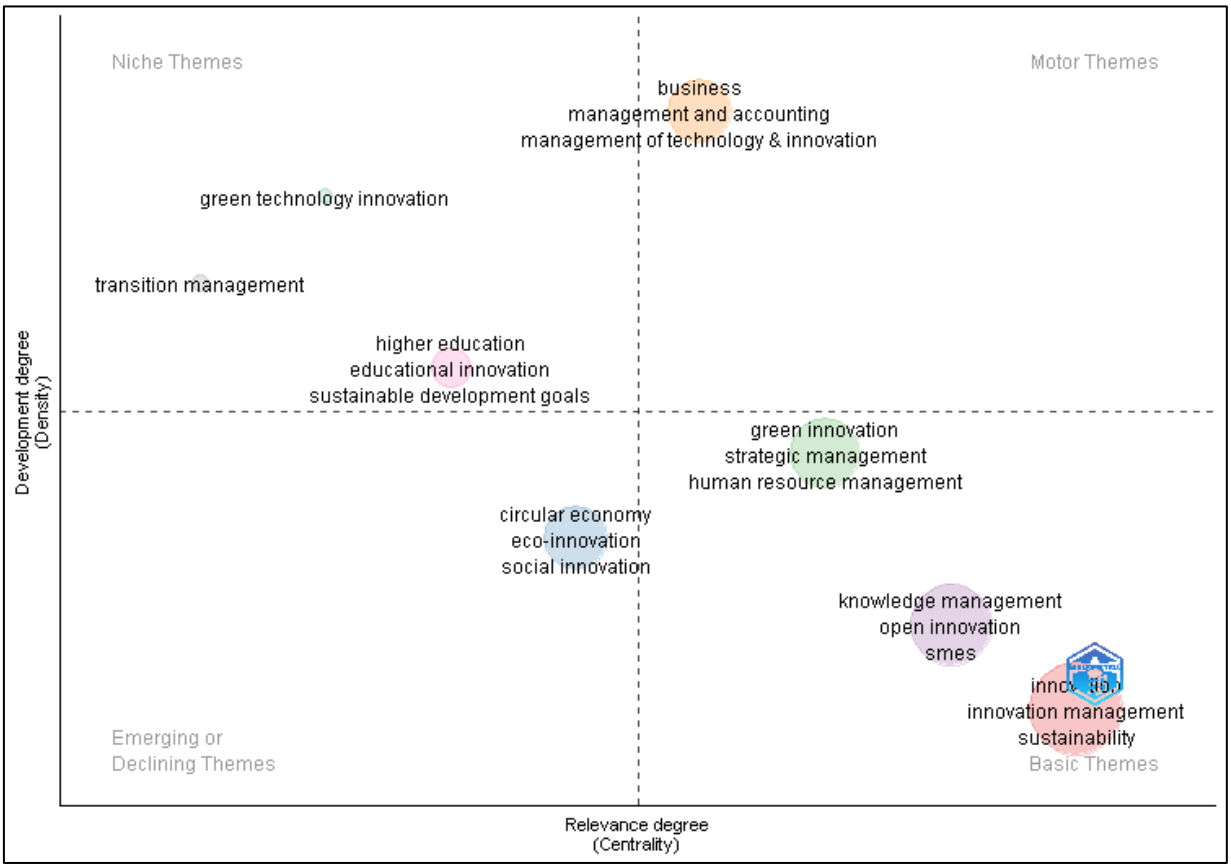


Figure 3. Thematic Maps
Source : Biblioshiny-R Output, 2025

In the lower-right quadrant, representing Basic Themes, key concepts like innovation, innovation management, sustainability, knowledge management, and open innovation appeared as highly central and well-developed. Their high centrality indicated their fundamental importance and frequent occurrence across the research landscape, serving as foundational topics upon which much of the other research was built. The high density suggested that these themes were mature, thoroughly explored, and had a well-established network of related concepts. This quadrant confirmed that the core of innovation management research revolved around the very act of managing innovation, with sustainability, knowledge, and open approaches being integral

components.

Moving to the upper-right quadrant, Motor Themes included green innovation, strategic management, and human resource management. These themes exhibited high centrality but also a high development degree, implying they were well-developed and highly relevant, driving the field forward and representing areas of intense ongoing research. Their motor status suggested they were actively contributing to the evolution of innovation management. In contrast, the upper-left quadrant,

Niche Themes, featured business, management and accounting, management of technology & innovation, green technology innovation, and transition management. These themes had a high development degree (density) but lower centrality, indicating they were specialized, well-researched areas but perhaps less broadly interconnected with the entire innovation management field. They represented more granular, focused areas of inquiry. Finally, the lower-left quadrant,

Emerging or Declining Themes, encompassed concepts such as circular economy, eco-innovation, and social innovation. These themes showed lower centrality and lower density, suggesting they were either nascent topics gaining traction or perhaps established themes whose prominence was waning. Given the overall trend towards sustainability, it is more likely that circular economy and social innovation were emerging themes that had not yet reached their full development or centrality within the broader innovation management discourse. This thematic map provided a crucial snapshot of the field's intellectual landscape, highlighting its mature foundations, active research drivers, specialized niches, and areas of future growth.

4.3.3. Thematic Evolution

The thematic evolution map that presented in figure 4 provided a dynamic visualization of how key research themes in innovation management shifted and interconnected across five distinct periods from 2005 to 2025. In the initial period (2005-2018), themes like technological innovation, governance, business management, strategic management, innovation performance, and knowledge management were prominent. This reflected an early focus on the foundational aspects of technological advancement, organizational strategy, and knowledge utilization in driving innovation. The strong presence of organizational innovation and sustainable innovation also suggested an early, albeit less dominant, interest in broader forms of innovation and their societal implications.

As the field progressed into the 2019-2020 period, innovation remained central, but new themes like circular economy, bioeconomy, product innovation, and innovation adoption gained prominence, indicating a growing interest in new economic models and the diffusion of innovations. The 2021-2022 period saw a notable emergence of energy and hotels as distinct themes, alongside a continued focus on technological innovation. This suggested that innovation management research was increasingly being applied to specific industry sectors and contemporary global challenges, such as energy transitions and the post-pandemic recovery in hospitality.

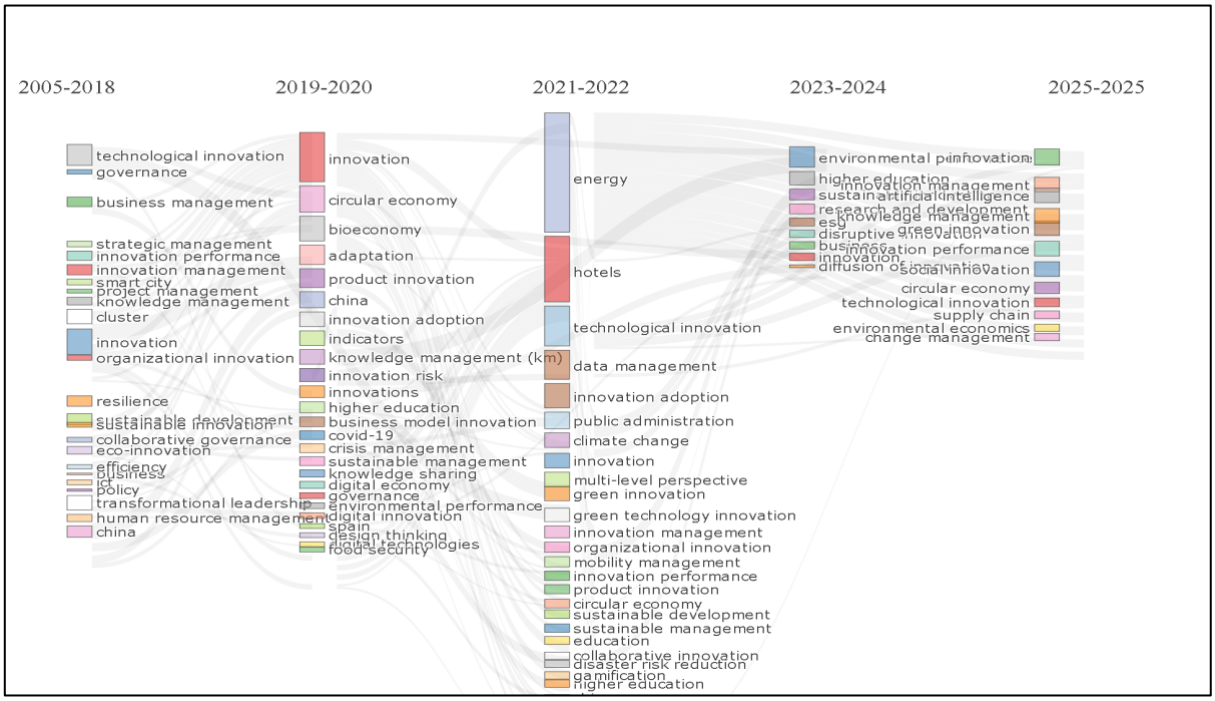


Figure 4. Thematic Evolution
Source : Biblioshiny-R Output, 2025

In the more recent periods of 2023-2024 and 2025, the thematic landscape became notably richer and more complex. Themes such as environmental innovation, higher education, artificial intelligence, research and development management, disruptive innovation, circular economy, supply chain, and change management emerged or intensified. The appearance of COVID-19 and crisis management in earlier periods (e.g., 2021-2022) highlighted the field's responsiveness to real-world events, while the later emergence of artificial intelligence and digital innovation reflected the pervasive influence of digital transformation. The thematic evolution map clearly illustrated a shift from broader, foundational concepts to more specialized, interdisciplinary, and context-specific areas of innovation research over the two decades, reflecting the field's maturity and its ability to adapt to evolving global priorities and technological advancements.

4.4. Social Structure

4.4.1. Author Collaboration Network

The author collaboration network (Figure 5) provided a visual representation of the collaborative relationships among authors within innovation management research from 2005 to 2025. The network prominently featured several dense clusters, indicating strong collaborative communities within the field.

The largest and most interconnected clusters appeared to be dominated by authors with East Asian surnames, particularly those with surnames like Zhang, Li, Wang, Liu, and Chen. For instance, a very large central cluster revolved around authors such as Zhang X, Li Y, Zhang H, and Liu Y, displaying numerous strong links between them. This visual confirmation reinforced the findings from the most relevant authors table, underscoring the significant and highly collaborative contributions from researchers in this geographical region. The size and density of these clusters suggested frequent co-authorship relationships, which might stem from shared institutional affiliations, common research interests, or established research groups.

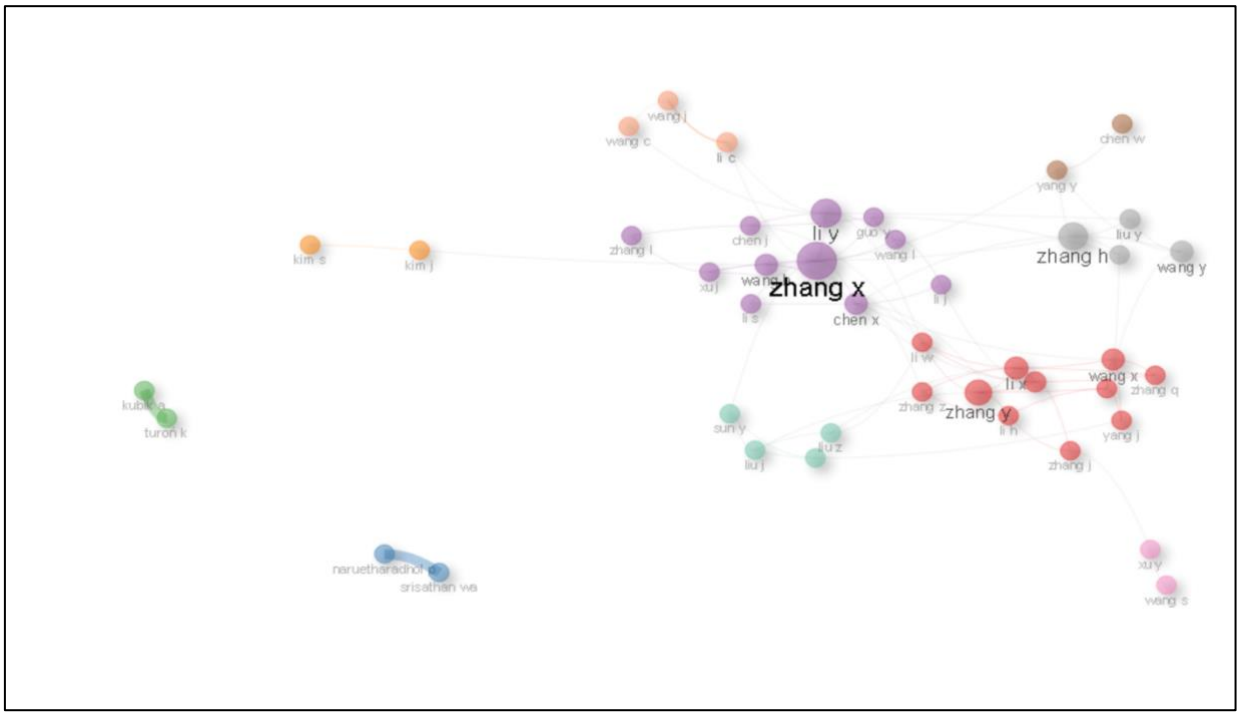


Figure 5. Author Collaboration Network
Source : Biblioshiny-R Output, 2025

Conversely, some authors or small clusters appeared more isolated, such as Kim S and Kubickova, indicating either a preference for solo authorship, collaboration within smaller, less visible networks, or perhaps a more geographically distant research base that did not frequently interact with the dominant clusters. The presence of these distinct clusters suggested that while the field of innovation management was expanding globally, significant pockets of concentrated collaboration existed, particularly within specific national or regional contexts. The network structure also offered insights into potential opinion leaders or central figures within these clusters, often represented by larger nodes, around whom other researchers tended to gravitate for collaborative projects. The visual representation of these collaborative ties provided a critical understanding of the social organization of knowledge production in innovation management, highlighting the power of collaborative research in driving scholarly output and intellectual advancement within the field.

4.4.2. Countries Collaboration World Map

Figure 6 showed the countries collaboration world map vividly illustrated the global distribution of innovation management research and the patterns of international collaboration from 2005 to 2025. The map clearly showed that China was a dominant force, depicted in a darker shade of blue, indicating a high volume of publications originating from the country. Similarly, countries in North America (e.g., USA) and Europe also appeared prominently shaded, underscoring their significant contributions to the field. The intricate web of reddish-brown lines crisscrossing the globe represented the collaborative links between researchers from different countries.

A striking observation was the high density of collaboration lines emanating from and connecting to China, North America, and various European countries. This suggested that these regions were not only prolific in their individual research output but also highly active in forming international

partnerships. For instance, numerous lines connected China with countries across Europe and North America, signifying strong transnational research endeavors. The presence of collaborations extending to Australia and parts of South America and Africa, although less dense, indicated that innovation management research was indeed a global enterprise, transcending geographical boundaries.

The visual evidence of these international co-authorships strongly correlated with the quantitative data from the data overview (Table 1), which reported that 26.45% of documents featured international co-authorships. This extensive international collaboration underscored the universal relevance of innovation management challenges and the collective effort by the global academic community to address them. The map provided crucial insights into the geographical distribution of research power and the extent to which scholarly knowledge in innovation management was being co-created and disseminated through international networks.

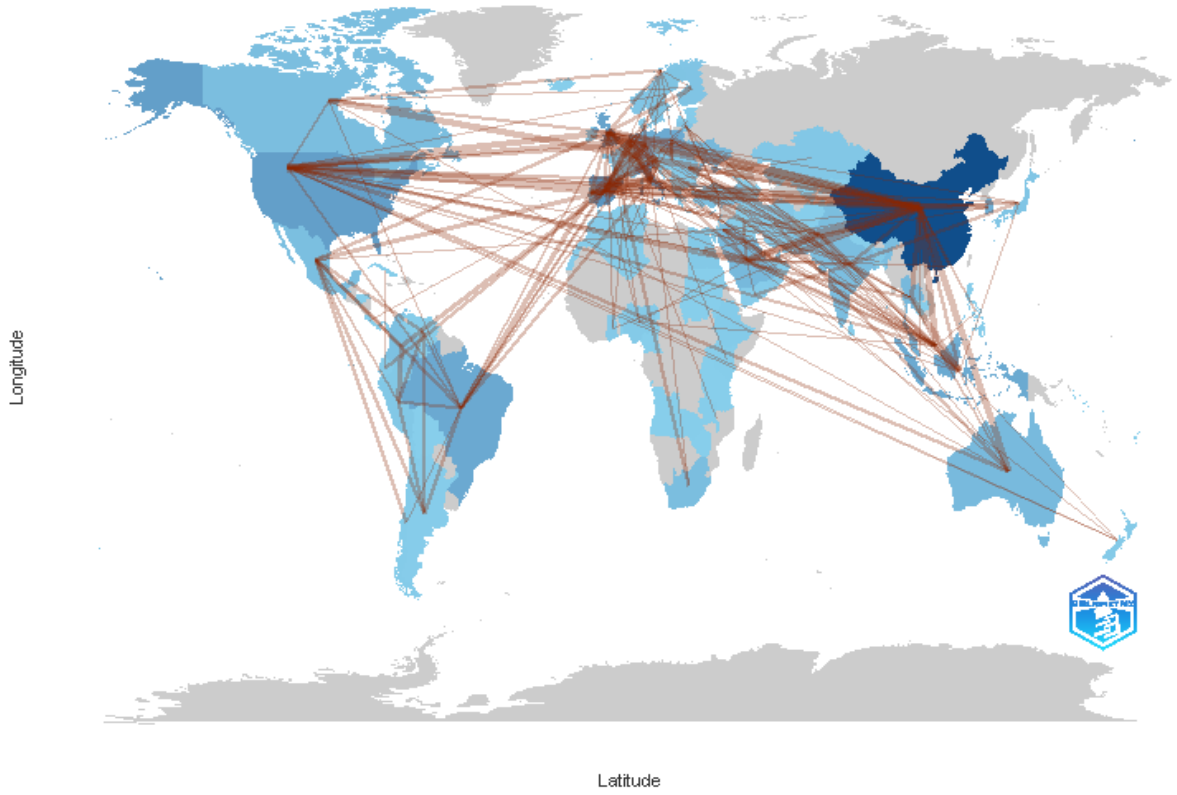


Figure 6. Authors Collaboration World Map
Source : Authors, 2025

4.5. DISCUSSION

The intellectual landscape of innovation management research has undergone a profound and dynamic transformation over the past two decades, as systematically mapped by this bibliometric review from 2005 to 2025. The findings underscore a rapidly expanding domain, evidenced by a robust annual growth rate of 26.49% and an average of 16.12 citations per document, signaling a vibrant and influential academic discourse. This growth is not merely quantitative but reflects a deeper conceptual evolution, moving beyond traditional R&D-centric views to embrace a more holistic and interconnected understanding of innovation.

A paramount finding is the increasing convergence of innovation management with sustainability concerns. The journal Sustainability (Switzerland) emerges as the most prolific source, publishing an impressive 848 articles, far surpassing other venues. This dominance aligns with the introduction's assertion that corporations increasingly prioritize purpose-driven innovation, embracing circular lifecycle approaches and renewable energy solutions. This shift signifies that sustainability is no longer an ancillary consideration but a fundamental principle influencing organizational performance and public perception, reflecting a maturity in the field where environmental and social responsibilities are deeply integrated into innovation frameworks.

The highly cited documents further reinforce this trend, with numerous top papers originating from Sustainability, underscoring the significant scholarly attention garnered by research at the intersection of innovation, sustainable development, and corporate responsibility. This intellectual migration towards sustainability-focused innovation addresses contemporary global challenges, emphasizing the critical need for a coherent research agenda responsive to these evolving demands. From a theoretical standpoint, this increasingly emphasizes concepts such as eco-innovation and green innovation, moving beyond traditional resource efficiency to systemic changes that foster environmental and social value creation (Valdez-Juárez & Castillo-Vergara, 2021). The integration of such theoretical perspectives, often rooted in resource-based view or stakeholder theory, highlights a more comprehensive understanding of innovation beyond mere technological advancements, encompassing broader societal and ecological impacts (Nielsen & Hakala, 2022).

The analysis of author productivity highlights the significant role played by East Asian scholars, particularly those with Chinese surnames, who dominate author contribution lists and form extensive collaborative networks. Authors such as Zhang X, Li Y, and Zhang H lead in publication output, suggesting that their research themes and methodologies exert considerable influence on the broader discourse of innovation management. This concentration of productivity may be attributed to the rapid economic development and strong emphasis on innovation within countries like China, which likely foster substantial research investments and opportunities.

Furthermore, the collaborative nature of the field is evident, with an average of 3.41 co-authors per document and substantial international collaborations accounting for over a quarter of co-authored works. This strong inclination towards collaboration, particularly involving regions like China, North America, and Europe, aligns with the evolving understanding of innovation as a complex interplay of internal capabilities and external networks. Such findings resonate with the theoretical shift from isolated R&D-centric innovation towards collaborative, open ecosystems, where diverse capabilities and expertise are leveraged through strategic partnerships (Schmid et al., 2022; Shaikh & Randhawa, 2022). The theoretical foundations here often draw upon social network theory and open innovation paradigms, demonstrating how firms leverage external knowledge sources and collaborations to enhance their innovative capacity (Crescenzi & Gagliardi, 2018; von Delft et al., 2019; Basuki et al., 2022). This emphasized that innovation is not solely an internal organizational process but a phenomenon deeply embedded in inter-organizational relationships and knowledge-sharing networks.

The conceptual structure of innovation management research, as revealed by co-occurrence networks, centers profoundly on innovation itself, intricately connected with knowledge management, sustainability, and open innovation. This reinforces the consensus that effective knowledge management is critical for driving innovation processes. The distinct clustering of business model innovation, circular economy, and social innovation further indicates a focus on

novel organizational approaches and broader societal impact beyond conventional product or process innovation. The thematic evolution illustrates a dynamic progression from foundational concepts to more specialized, interdisciplinary, and context-specific areas. Early periods (2005-2018) focused on technological advancement and knowledge utilization, while later periods (2019-2025) saw the emergence of themes such as circular economy, artificial intelligence, crisis management, and the application of innovation to specific sectors like energy and hotels.

This responsiveness to real-world events and the pervasive influence of digital transformation, notably Artificial Intelligence, which has emerged as a central catalyst in innovation management, underscores the field's maturity and its capacity to adapt to evolving global priorities. The theoretical understanding of business model innovation, for instance, has evolved significantly, recognizing its role in creating and capturing value in novel ways beyond product innovation (Babina et al., 2024; Saari et al., 2024; von Delft et al., 2019). Moreover, the increasing focus on digital transformation and AI in innovation management is supported by theoretical frameworks that explore how digital technologies reshape organizational capabilities, foster dynamic capabilities, and enable new forms of innovation (Shin et al., 2022; Z. Wang et al., 2023). Despite advancements, challenges persist in fostering a robust innovation culture and bridging the implementation gap between theoretical frameworks and practical applications, a large heterogeneity of results continues to be observed. This highlighted the ongoing necessity for systematic and quantitative approaches, like bibliometric analysis, to objectively map the intellectual landscape and guide future research agendas effectively.

5. CONCLUSION

5.1. Conclusion

This study systematically elucidated the dynamic evolution of this critical field, addressing the prevailing research gap for a comprehensive, updated overview leveraging the Scopus database. Our overarching purpose was to scrutinize the field's trajectory by identifying growth patterns, key contributors, thematic shifts, and collaboration dynamics2. The findings unequivocally demonstrate a vibrant and rapidly expanding research domain, evidenced by a substantial annual growth rate of 26.49% and a dataset of 2170 journal articles. The prominence of Sustainability (Switzerland) as the most prolific publication venue highlights a significant convergence between innovation management and sustainability discourse, signalling a critical theoretical shift towards responsible and green innovation.

Furthermore, the analysis revealed a notable concentration of scholarly productivity among East Asian authors, particularly those from China, who significantly shaped the research landscape and formed dense collaborative networks. This regional dominance, coupled with a substantial 26.45% of international co-authorships, underscores the global, yet regionally centralized, nature of innovation management research. The thematic evolution highlighted a progression from foundational concepts like knowledge management and open innovation to more contemporary, context-specific areas such as artificial intelligence, circular economy, and crisis management, reflecting the field's responsiveness to technological advancements and global challenges like COVID-19. Ultimately, this study provides a robust, empirical foundation for understanding the intellectual structure and social dynamics of innovation management research over the past two decades, fulfilling its objective of offering a structured overview to guide future scholarly endeavours.

5.2. IMPLICATION

The findings of this bibliometric review carry substantial implications for various stakeholders within the innovation management ecosystem, addressing the identified research problems concerning the multifaceted and often vague nature of current managerial practices, and the need for a more unified model. For academics and researchers, this study offers a critical roadmap to navigate the burgeoning literature, identifying key journals like Sustainability (Switzerland) as central to contemporary discourse, and highlighting influential authors who are shaping the field's intellectual direction. The identified thematic shifts, particularly towards sustainability, artificial intelligence, and the circular economy, signal fertile grounds for future theoretical development and empirical investigation, encouraging scholars to delve deeper into these emerging areas. The strong international collaboration patterns, especially involving East Asian countries, suggest opportunities for fostering cross-cultural research partnerships and developing more globally relevant innovation management frameworks that account for diverse regional contexts.

For practitioners and policymakers, the revealed convergence of innovation management with sustainability and ethical considerations underscores the imperative for organizations to integrate environmental and social responsibility into their innovation strategies, moving beyond traditional R&D-centric models. The emphasis on open innovation and collaborative ecosystems necessitates a strategic rethinking of internal structures and management practices to effectively leverage external knowledge and partnerships. Policymakers can utilize these insights to design supportive frameworks that incentivize sustainable innovation, foster international research collaboration, and address the digital era blind spot by promoting the integration of advanced technologies like AI into innovation processes. Ultimately, this study's contribution lies in providing a data-driven foundation for developing more coherent, actionable, and responsive innovation management strategies that can navigate the complexities and leverage the opportunities of the modern globalized economy.

5.3. LIMITATION AND SUGGESTION FOR FUTURE RESEARCH

Despite providing a comprehensive overview of innovation management research, this bibliometric review is not without limitations, which concurrently present fertile avenues for future scholarly inquiry. Firstly, the study's reliance solely on the Scopus database, while offering extensive coverage, inherently excludes publications indexed in other prominent databases such as Web of Science or Google Scholar. This single-database approach, while ensuring consistency, might have omitted certain niche publications or regional scholarship not fully captured by Scopus, potentially influencing the comprehensiveness of author and source prominence. Future research could address this by conducting multi-database bibliometric analyses to provide an even broader and more inclusive intellectual mapping of the field.

Secondly, the search strategy was confined to articles containing Innovation Management in their title, abstract, or keywords. While this ensured high relevance, it might have inadvertently excluded highly impactful studies where innovation management was a central theme but not explicitly stated using these specific keywords. Future studies could explore the use of broader search queries or more sophisticated natural language processing techniques to identify a wider array of relevant publications. Furthermore, while the study identified thematic evolution and conceptual structures, a deeper qualitative analysis of the content of highly cited or emerging papers could provide richer insights into why certain themes gained prominence or how specific theoretical advancements were made. Future research could therefore combine bibliometric analysis with systematic content

analysis or qualitative reviews of specific thematic clusters to provide a more granular understanding of the intellectual trajectory and theoretical development within innovation management. Lastly, given the rapid pace of technological change, longitudinal studies that continuously update such bibliometric maps would be invaluable for keeping pace with the field's dynamic evolution.

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